Build Your Skills

Your guide to careers in ARCHITECTURE & CONSTRUCTION

Great Career Ideas • Creating Your Plan • College Resources
A message from . . .

Robert Bentley, Governor of Alabama

The investments we make in our students today will help shape their futures for years to come. Our students are destined to become high-performing professionals in all sectors of the workforce.

Alabama SUCCESS is an initiative designed to help students access valuable information about current careers, postsecondary learning, and financial literacy resources.

Our goal is to give students the opportunities they need to prepare themselves for success. We want our students to be well-equipped for top careers in Alabama’s workforce – which has a growing influence on the global marketplace.

This Alabama SUCCESS guide is a great resource to assist in preparing for a bright and successful future.

Dr. Thomas R. Bice, Alabama State Superintendent of Education

Alabama SUCCESS is an invaluable resource designed specifically for students. By learning about actual career fields and the education and experience required for specific jobs, you will be better able to figure out what you want to do after high school and what you need to do to achieve your goals.

This guide is part of a series created to help students in Alabama learn more about careers, salaries, and the steps they need to take to reach their goals. By connecting what they learn in the classroom to real jobs that interest them, Alabama students will graduate better prepared for life and work. You can help your child use this guide by:

◆ Talking to your child about what careers interest him or her—and why
◆ Sharing your work experiences—pro and con—with your child
◆ Asking people in your community who work in jobs that interest your child to talk about their careers or to let your child visit their workplace.
ARCHITECTURE & CONSTRUCTION

What Employers Want

Gary Greenshields, President
The Alabama Council of The American Institute of Architects

Architecture & Construction employers are looking for people with sound communication skills. The essence of the practice of architecture is being able to communicate with your clients in order to understand their needs. And because you will be dealing with a wide variety of clients, it is important that you have a well-rounded educational background.

Technical knowledge is also critical. As the field becomes more digitally oriented, there is an even greater need for workers to be able to use computer design software. Employers are looking for computer literate workers who have the ability to adapt to new software as it comes out. Fortunately, any Alabama program you decide to enroll in will be fully equipped with the current software that you need to learn.

Regardless of what new technology is being used, employers are still essentially looking for solid and reliable designers who are able to design things large and small.

A

ARCHITECTURE & CONSTRUCTION
Architecture & Construction

Architecture & Construction professionals create virtually every structure you see around you, from parks to community housing. Whether you dream of designing a new building or wielding a blowtorch on a construction crew, opportunities are available throughout Alabama for highly skilled, hardworking people in this field.

NAME: Terrence Marzette
EDUCATION: Huffman High School, Birmingham; Alabama A&M University, Huntsville—Mechanical Engineering and Mechanical Drafting and Design Technology, Dual Bachelor of Science Degree

When Terrence Marzette was a 10th grader at Birmingham’s Huffman High School, he took “Technical Drafting,” a class that would change the course of his professional life.

“I began to see how I could utilize my love for drawing in a real job,” he recalls.

After graduating, Marzette went on to study Mechanical Engineering and Mechanical Drafting Design Technology at Alabama A&M University in Huntsville.

After working for a few years for an architecture firm, Marzette eventually found his way back to Huffman High, where he has taught Drafting Design Technology since 2004.

“I tell my students all the time that the earlier the better when it comes to taking steps towards making a career. You just have to be real with yourself and pick a job that you can see yourself having fun at.”

Does the Architecture & Construction career cluster fit you, your talents, and your dreams? Take this quick quiz to find out.

**YOU DECIDE**

1. Do you enjoy building things or drawing?
   **WHY IT MATTERS:** In the Architecture & Construction career cluster, you can either be a designer or a builder.

2. Do you enjoy working with tools?
   **WHY IT MATTERS:** Whether you work on the creative design of buildings, or the hands-on side, you will need to be skilled at using a multitude of different tools.

3. Do you make good grades in math and science?
   **WHY IT MATTERS:** Math and science are pivotal to Architecture & Construction because they serve as the basis for design principles.

4. Do you like working with others?
   **WHY IT MATTERS:** Creative work gets judged by audiences, critics, editors, and clients, so dealing with criticism is part of most jobs.

5. Do you have a strong attention to detail?
   **WHY IT MATTERS:** The key to working in Architecture & Construction is accuracy. No matter your job, employers will expect you to manage many details, both large and small.

If you answered “yes” to most of these questions, Architecture & Construction could be right for you.

LEARN MORE
Sit down with your parents and counselor and create a plan.

Map out an Alabama Education Plan (sample at right) based on your interests, strengths, and possible career goals. Your plan outlines the courses and electives you’ll take in high school, plus related clubs and career preparation. Your counselor will work with you to determine the learning experiences needed for you to complete your plan, such as using distance learning or earning college credit from your local community college.

Here’s a sample Alabama Education Plan for you to use as a guide.

**Articulation Agreement**
is a fancy term for a simple education agreement that can streamline your road to a successful career.

Statewide articulation agreements link all high schools and two-year colleges in Alabama. They provide credit at two-year colleges for coursework mastered at the high school level.

Articulation agreements can take you down your career pathway as well. In many cases, students transferring from two-year to four-year colleges and universities can complete four-year general studies core course requirements before they transfer.

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**SAMPLE: Alabama Education Plan**

<table>
<thead>
<tr>
<th>9th Grade</th>
<th>Math</th>
<th>English</th>
<th>Science</th>
<th>Social Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algebra I</td>
<td>English 9</td>
<td>Physical Science*</td>
<td>World History 1500-Present</td>
<td></td>
</tr>
<tr>
<td>Geometry</td>
<td>English 10</td>
<td>Biology</td>
<td>United States History to 1877</td>
<td></td>
</tr>
<tr>
<td>Algebra II with Trigonometry</td>
<td>English 11</td>
<td>Chemistry</td>
<td>United States History to Present</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12th Grade</th>
<th>Math</th>
<th>English</th>
<th>Science</th>
<th>Social Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Calculus</td>
<td>English 12</td>
<td>Physics</td>
<td>Government and Economics</td>
<td></td>
</tr>
</tbody>
</table>

**General Education Requirements**
- English Composition I
- English Composition II or SPH 106
- Humanities Elective
- Intermediate College Math
- Microcomputer Applications
- Math of Science Elective
- History, Social, or Behavioral Science
- Orientation for Career Students

**Required and CTE Courses**
- Ag/Construction
- Landscape Design and Management
- Business and Marketing Essentials
- Interactive Multimedia Design

**Other Optional Courses**
- Architecture, Construction, Manufacturing
- Construction Site Preparation and Foundations
- Construction Framing
- Advanced Drafting Design
- Introduction to Architectural Design

**Sampling of Career and Technical Education Courses in Pathway**
- Commercial Wiring
- Electromechanical Controls
- Introduction to Welding
- Paint Technology
- Construction Finishing and interior Systems
- Residential Masonry I & II
- Commercial Masonry Construction
- Masonry in High-Rise Construction
- Masonry Special Applications and Finishes
- Basic Wiring
- Residential Wiring
- Industrial Wiring

**Education and Career Assessments:**
- 8th Grade: Interest inventory and education plan initiated for all learners
- 11th Grade: College placement assessment

**Career Learning Experiences:**
- Career preparation—paid and unpaid, internships, job shadowing
- Extracurricular Experiences: Future Business Leaders of America (FBLA)
- Co-Curricular Experiences: Compete in CIRT-ACE National Design Competition

**Get Career Credentials**

If you’re a student in a career and technical education (CTE) program, you may have the option of earning a Career Readiness Certificate along with your high school diploma. The nationally recognized certificate shows you’re proficient in applied math, reading for information, and locating information—skills employers highly value. Ask your school counselor about the statewide program; if it’s not in your high school now, it will be implemented soon.
CAREER IDEAS

Need-to-know facts and figures about real Alabama jobs, salaries, and education options in Architecture & Construction.

The 12 careers highlighted on the next page are a sampling of occupations in the Architecture & Construction cluster in Alabama. The charts include occupation name, description, plus wages for workers just starting out in the profession, average wages for those in the occupation, and the wages earned by experienced workers in the job (see “How to Read Job Charts”). The bar below the occupation’s name contains the Standard Occupational Code (SOC); use the SOC to look up more information about the career in online databases such as O*NET (see below). The bars are also color-coded to indicate the minimum level of education required for each profession.

For further information on occupations in all career clusters, go to the O*NET database at www.online.onetcenter.org.

Check Out These Three COOL CAREERS

**Stormwater Specialist**

**WHAT:** Provide communities with technical support for stormwater drain management. Perform administrative tasks associated with implementing environmental safety programs that comply with local, state, and federal laws.

**WHO:** As federal stimulus money enters communities for the use of overhauling infrastructure, civil engineers will be presented with a newfound opportunity to focus on stormwater management.

**Solar Panel Installer**

**WHAT:** In homes and buildings, install solar energy systems that regulate temperature by creating either heat or cool air.

**WHO:** Solar installers often work outdoors and in extreme temperatures. They must be physically fit, and confident enough to prove their capabilities working on rooftops and in other environments. They must communicate well so they can provide the best service.

**Home Energy Rater**

**WHAT:** Using a variety of methods, test the energy efficiency of new and existing residential and industrial construction projects.

**WHO:** Home energy raters have a strong grasp of the industry’s newest energy efficiency building standards and work to stay up to date on those standards. Though raters often have a background in Architecture & Construction, many young professionals are pursuing energy rating as a career because of the exposure their modern education has given them to new energy efficiency standards.
<table>
<thead>
<tr>
<th>Occupation</th>
<th>Median Annual Salary</th>
<th>Mean Annual Salary</th>
<th>Maximum Annual Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Power-Line Installer and Repairer</td>
<td>$15.80</td>
<td>$25.67</td>
<td>$33.50</td>
</tr>
<tr>
<td>Construction Manager</td>
<td>$24.50</td>
<td>$35.76</td>
<td>$64.26</td>
</tr>
<tr>
<td>Interior Designer</td>
<td>$10.26</td>
<td>$20.34</td>
<td>$32.71</td>
</tr>
<tr>
<td>Mechanical Drafter</td>
<td>$14.33</td>
<td>$23.06</td>
<td>$37.79</td>
</tr>
<tr>
<td>Electrical and Electronics Repairer</td>
<td>$21.75</td>
<td>$29.44</td>
<td>$34.44</td>
</tr>
<tr>
<td>Construction Manager</td>
<td>$21.46</td>
<td>$28.16</td>
<td>$32.71</td>
</tr>
<tr>
<td>Landscape Architect</td>
<td>$15.29</td>
<td>$21.75</td>
<td>$34.44</td>
</tr>
<tr>
<td>Architect</td>
<td>$15.80</td>
<td>$21.75</td>
<td>$34.44</td>
</tr>
<tr>
<td>Sheet Metal Worker</td>
<td>$10.06</td>
<td>$15.84</td>
<td>$24.57</td>
</tr>
<tr>
<td>Pile Driver Operator</td>
<td>$18.43</td>
<td>$21.46</td>
<td>$28.16</td>
</tr>
<tr>
<td>Civil Engineer</td>
<td>$20.03</td>
<td>$33.33</td>
<td>$54.51</td>
</tr>
<tr>
<td>Mechanical Drafter</td>
<td>$14.18</td>
<td>$22.57</td>
<td>$34.76</td>
</tr>
</tbody>
</table>

**Civil Engineer**
Plan structures such as buildings, highways, and bridges, ensuring the best and safest materials and methods are used.

**Construction and Building Inspector**
Inspect structures to determine structural soundness and compliance with specifications, building codes, and other regulations.
Think Again

Now is the time to take a fresh look at Architecture & Construction careers you may not have considered before.

**MYTH:** Architecture & Construction jobs are only available when there is new construction going on.

**FACTS:** Not all Architecture & Construction jobs are connected to new building projects. At a given time, any number of companies and individuals are renovating or adding on to existing structures in their businesses or at their homes. Owners of everything from office buildings to schools are constantly seeking new life for their buildings: a great opportunity for young professionals in this career cluster to specialize in renovation and restorations. Plus, as more and more companies look to “Go Green” with their building projects, an entire new sector of jobs is opening up in the Architecture & Construction cluster.

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**Reality Check**

**What It Costs to Live on Your Own in Alabama**


- **Rent and utilities:** $700–$800 (1-bedroom)
- **Gasoline:** $124 (1,000 miles @ $3.10 per gallon, 25 MPG)
- **Groceries:** $200–$250
- **Car insurance:** $30–$95 (6-month policy)
- **Cell phone:** $70
- **Cable and Internet:** $90
- **Car payment:** $350–$450 (Best 2010/2011 4-door)

**Monthly total:** $1,310–$1,654

**Yearly total:** $15,742–$19,851

Note: Keep in mind that your paycheck will be reduced by about 30 percent to cover taxes, retirement, and insurance. What’s left is known as your “take-home pay.” Subtract 30 percent from the salaries shown on page 5 to get a more accurate take-home amount.

Sources:
- Rent: www.rentbits.com/rb/l/rental-rates/birmingham-al
- Car: www.carsdirect.com
- Groceries: www.wkrg.com/consumer/article/alabamians_paying_more_for_groceries/23889
- Cable and Internet: www.birmingham.mybrighthouse.com
- Car insurance: www.progressive.com
- Gas: www.gasbuddy.com

Keep in mind that your paycheck will be reduced by about 30 percent to cover taxes, retirement, and insurance. What’s left is known as your “take-home pay.” Subtract 30 percent from the salaries shown on page 5 to get a more accurate take-home amount.
While attending high school and postsecondary institutions, all Alabama students should consider getting certifications related to their career cluster of interest. These certifications can improve a student’s skill set, as well as increase the student’s overall chance of gaining employment in the field.

**Check It Out**

Most Alabama schools offer these student organizations related to the Architecture & Construction career cluster:

**SkillsUSA** • [www.skillsusa.org](http://www.skillsusa.org)
SkillsUSA is a partnership of students, teachers, and industry working to ensure American has a skilled workforce. Programs include student competitions and employer-driven training in all career and technical education areas.

**National FFA Organization** • [wwwffa.org](http://wwwffa.org)
This federally chartered organization is one of the most critical CTSOs in the field of agriculture. Educational opportunities abound with FFA, particularly for students interested in Architecture and Construction.

**Take It to the Next Level**

In Alabama, the learning doesn’t stop with high school graduation. Here is a list of public postsecondary (after high school) institutions that may offer programs related to this cluster. For Web links to these two- and four-year institutions, visit [www.ache.alabama.gov/Colleges&Universities/Directory.htm](http://www.ache.alabama.gov/Colleges&Universities/Directory.htm).

### Two-Year Institutions Offering Certificates or Associate’s Degrees
- Alabama Southern Community College, Monroeville
- Bevill State Community College, Sumiton
- Bishop State Community College, Mobile
- Calhoun Community College, Decatur
- Central Alabama Community College, Alexander City
- Chattahoochee Valley Community College, Phenix City
- Enterprise-Szark Community College, Enterprise
- Faulkner State Community College, Bay Minette
- Gadsden State Community College, Gadsden
- H. Councill Trenholm State Technical College, Montgomery
- Jefferson Davis Community College, Brewton
- Jefferson State Community College, Birmingham
- J.F. Drake State Community College, Huntsville
- J.F. Ingram State Technical College, Deatsville
- Lawson State Community College, Birmingham
- Lurleen B. Wallace Community College, Andalusia
- Marion Military Institute, Marion
- Northeast Alabama Community College, Rainsville
- Northwest-Shoals Community College, Muscle Shoals
- Reid State Technical College, Evergreen
- Shelton State Community College, Tuscaloosa
- Snead State Community College, Boaz
- Southern Union State Community College, Wadley
- Wallace Community College (Selma), Selma
- Wallace State Community College (Dothan), Dothan
- Wallace State Community College (Hanceville), Hanceville

### Four-Year Institutions Offering Bachelor’s, Master’s, Doctoral, or First Professional Degrees
- Alabama A&M University, Normal
- Alabama State University, Montgomery
- Athens State University, Athens
- Auburn University, Auburn
- Auburn University at Montgomery, Montgomery
- Jacksonville State University, Jacksonville
- Troy University, Troy
- Troy University Dothan, Dothan
- Troy University Montgomery, Montgomery
- University of Alabama at Birmingham, Birmingham
- University of Alabama in Huntsville, Huntsville
- The University of Alabama, Tuscaloosa
- University of Montevallo, Montevallo
- University of North Alabama, Florence
- University of South Alabama, Mobile
- University of West Alabama, Livingston

### Certifications
While attending high school and postsecondary institutions, all Alabama students should consider getting certifications related to their career cluster of interest. These certifications can improve a student’s skill set, as well as increase the student’s overall chance of gaining employment in the field.
**COLLEGE PREP: Getting Accepted**

The college admissions process can be stressful and a bit scary, especially if you are the first in your family to apply. Give yourself the best shot at getting into a college program that matches your goals by following these five steps:

1. **Make the Grade**
   - Your grade point average really does count, so do your best work on every assignment, pay attention in class, and participate in group discussions.

2. **Get Involved**
   - Build teamwork and leadership skills by joining clubs and teams at your school, volunteering for service projects, and participating in church or community activities.

3. **Make a List**
   - Before you can apply to college, you have to figure out what you would like to study and what matters most to you (like location, size, or religious affiliation). Use online tools like Collegeboard.com and ACCS.cc to learn more about each school and take virtual campus tours.

4. **Plan for Tests**
   - Most colleges want scores from the ACT, SAT, or SAT II tests. See what tests the schools on your list require, sign up to take them in time to include the scores on your application, and practice the free SAT sample questions at www.collegeboard.com or sample ACT tests at www.actstudent.org.

5. **Be Neat and Complete**
   - Before you send in a college application, double-check your spelling, make sure nothing is missing, and save a copy just in case you have to submit it again.

**PAYING YOUR WAY: Financial Aid**

Every Alabama student can afford to go to college. It just takes a little planning. Put your college dreams within financial reach by taking these five steps:

1. **Consider a Community College**
   - Alabama’s public and private two-year colleges offer an affordable way to earn an associate’s degree or complete enough credits to transfer into a four-year school as a junior. Learn more at www.accs.cc.

2. **Weigh Your Options**
   - Attending one of Alabama’s four-year public or private schools cuts travel costs and other living expenses, as compared to attending schools out of state. In addition, public schools offer reduced in-state tuition, and, if there’s a college nearby, you can save even more by living at home.

3. **Rise to the Top**
   - Apply to a couple of schools at which your grades and accomplishments put you near the top of the typical applicant pool. Since your application will stand out, you’ll be more likely to qualify for scholarships and other merit aid.

4. **Do a Little Digging**
   - More than one million local, national, and college-specific scholarships are available each year. Ask your school librarian and counselor for help finding printed scholarship resource guides. To find and apply for scholarships online, sign up for the free college scholarship search source FastWeb at www.fastweb.com.

5. **Apply for Aid**
   - Fill out the Free Application for Federal Student Aid (FAFSA) as soon as possible after January 1 of the year you’ll be starting college. FAFSA forms and instruction booklets are available in your guidance counselor’s office and online at www.fafsa.gov. Some schools also require the CSS/Financial Aid Profile form (profileonline.collegeboard.com), and others have their own financial aid forms. Carefully read each college’s application to figure out what forms you need to submit and when.
Articulation agreements: formal agreements between or among educational organizations (high schools, community colleges, and universities) that allow students to receive college credit for courses taken in high school.

Associate’s degree: a two-year degree awarded by a community college.

Bachelor’s degree: a four-year degree awarded by a college or university.

Career and technical student organizations (CTSOs): co-curricular organizations for students that offer activities and competitions related to particular careers.

Career Pathways: identifies pathways from high schools to two- and four-year colleges, technical schools, graduate schools, apprenticeship programs, and workplace so that learners can recognize the relationship between what they learn in school and what they can do in the future.

Career Clusters: pathways are sub-groupings of occupations/career specialties. Occupations/Career specialties are grouped into Pathways based on the fact that they require a set of common knowledge and skills for career success.

Doctoral degree: a degree awarded by universities for study beyond a master’s degree. May also be called a Ph.D. or a first professional degree.

Dual enrollment: a program between Alabama public colleges and universities and local boards of education that allows high school students to enroll in certain approved college-level courses to receive both high school and college credit.

ECEP (Early College Enrollment Program): a program that allows juniors and seniors to have full-time enrollment at an Alabama public college or university while still graduating with their class and staying involved with high school activities.

Extended learning experiences: participation in career and technical student organizations, co-curricular activities, job shadowing, internships, or community service.

Internship: an extended learning experience that gives students an opportunity to work temporarily at an entry-level job in a career that interests them.

Job shadowing: an extended learning experience in which students observe professionals in particular careers as they go through a day on the job.

Master’s degree: a degree awarded by universities for study beyond a bachelor’s degree.

Postsecondary education: education beyond high school. Middle and high school are referred to as secondary education, so postsecondary means after high school.

STARS (State Transfer & Articulation Reporting System): STARS System allows public two-year students in Alabama to obtain a Transfer Guide/Agreement for the major of their choice. This guide/agreement, if used correctly, guides the student through their first two years of coursework and prevents loss of credit hours upon transfer to the appropriate public four-year university in Alabama.

Resource Shelf
Use these websites and other resources available from your school counselor to learn more about careers, career clusters, and educational and job opportunities in high school and beyond.

ACCESS • www.accessdl.state.al.us
ACCESS (Alabama Connecting Classrooms, Educators, and Students Statewide) Distance Learning provides opportunities and options for Alabama public high school students to engage in advanced placement (AP), elective, and other courses to which they may not otherwise have access.

Alabama Career Information Network • www.alcareerinfo.org
This new Web portal increases Alabama students’ and families’ access to valuable career exploration activities and college financial aid information.

Alabama Commission on Higher Education • www.ache.alabama.gov
Click on “Colleges & Universities” within this website for a list of four-year institutions in Alabama.

The Alabama Community College System • www.accs.cc
Learn all about the public and private two-year colleges in Alabama. Connect directly to each school’s website to see the courses, majors, degrees, and scholarships it offers to Alabama students.

Alabama Tech Prep • www.altechprep.org
This booklet is sponsored by Alabama Tech Prep. The goal of Tech Prep is to create a smooth transition from high school to college and to a career.

Alabama Virtual Library • www.avl.lib.al.us
This Alabama Legislature–funded site provides all students, teachers, and citizens of the State of Alabama with online access to essential library and information resources.

America’s Career Infonet • www.acinet.org/acinet
Use this site to search for occupational information, industry information, and state-specific labor market information.

Career Voyages • www.careervoyages.gov
This career planning resource helps students, parents, career changers, and career advisors.

O*NET (Occupational Information Network) • www.online.onetcenter.org
O*NET provides full information on occupations, including state-by-state salary data, employment prospects, and skill matching for students.

A valuable resource for both counselors and students, this federal website offers updated information on careers, job responsibilities, and working conditions, salaries, and what jobs will be available in the future.
Alabama Career Clusters and Pathways

Foundation and Knowledge Skills for Career and Technical Education

Non-discrimination Statement
No person shall be denied employment, be excluded from participation in, be denied the benefits of, or be subjected to discrimination in any program or activity on the basis of disability, sex, race, national origin, color, or age.

Ref: Sec. 1983, Civil Rights Act, 42 U.S.C.; Title VI and VII, Civil Rights Act of 1964; Rehabilitation Act of 1973; Sec. 504; Age Discrimination in Employment Act; Equal Pay Act of 1963; Title IX of the Education Amendment of 1972; Title IX Coordinator, P.O. Box 302101, Montgomery, Alabama 36130-2101 or call (334)242-8444.

STATE OF ALABAMA • DEPARTMENT OF EDUCATION • THOMAS R. BICE, STATE SUPERINTENDENT OF EDUCATION 9/12

Contact Information
Alabama SUCCESS/Alabama Tech Prep
Margaret Smith
P.O. Box 302101
Montgomery, AL 36130-2101
Phone: 334-353-4346
Fax: 334-242-0234
E-mail: msmith@alsde.edu